

Appl. No. 10/065,595
Docket No. 125974/GEN-0053

REMARKS / ARGUMENTS

Status of Claims

Claims 1-33, are pending in the application. Claims 14, 15 and 31-33 stand withdrawn from further consideration by the examiner, under 37 CFR 1.142(b), as being drawn to a non-elected invention. Claims 1-13 and 16-30 stand rejected. Applicant has amended Claims 1, 3-5, 7, 10, 16-17, 19, 21 and 24, has cancelled Claims 14-15 and 31-33, and has added new Claims 34-40, leaving Claims 1-13, 16-30 and 34-40 for consideration upon entry of the present Amendment.

Applicant respectfully submits that the rejections under 35 U.S.C. §102(e) and 35 U.S.C. §103(a) have been traversed, that no new matter has been entered, and that the application is in condition for allowance.

Response to Restriction/Election Requirement

In affirmation of the provisional election made in connection with a telephone conversation with the Examiner on 11/17/2004, Applicant hereby elects the invention of Group 1, Claims 1-13, and Group 3, Claims 16-30, as amended in the communication filed 11/18/2004, without prejudice, thereby retaining the right to timely file divisional applications.

Rejections Under 35 U.S.C. §102(e)

Claims 1-13 and 16-30 stand rejected under 35 U.S.C. §102(e) as being anticipated by Okerlund et al. (U.S. Publication No. 2003/0187358, hereinafter Okerlund).

Applicant traverses this rejection for the following reasons.

Applicant respectfully submits that "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, *in a single prior art reference.*" *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (emphasis added). Moreover, "[t]he

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identical invention must be shown in as complete detail as is contained in the *** claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Furthermore, the single source must disclose all of the claimed elements “arranged as in the claim.” *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716, 223 U.S.P.Q. 1264, 1271 (Fed. Cir. 1984). Missing elements may not be supplied by the knowledge of one skilled in the art or the disclosure of another reference. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 780, 227 U.S.P.Q. 773, 777 (Fed. Cir. 1985).

Regarding Independent Claims 1 and 16

Applicant has amended Claim 1 to now recite, inter alia, “...An imaging system for use in medical intervention procedure planning *involving a coronary sinus*, comprising: a medical scanner system for generating a volume of cardiac image data *using a protocol configured for imaging the coronary sinus*... an image generation system for generating at least one viewable image from the volume of cardiac image data through *dynamic segmentation*... said operator interface system comprises instructions for using and saving at least one of the volume of cardiac image data, the at least one viewable image, the anatomical landmark, and a measured viewable parameter... *that involves the coronary sinus*.”

Applicant has amended Claim 16 to now recite, inter alia, “...A method for generating an image for use in medical intervention procedure planning *involving a coronary sinus*, comprising: acquiring a volume of cardiac image data from a medical scanner *using a protocol configured for imaging the coronary sinus*...”.

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Support for the claim amendments may be found in the specification as originally filed at Paragraphs [0017] and [0022-0024]. No new matter has been added.

In comparing Okerlund with the instant invention, Applicant respectfully submits that Okerlund does not disclose an imaging system, or method for generating an image, for use in medical intervention procedure planning *involving a coronary sinus*, involving the procurement of a volume of cardiac image data from a medical scanner *using a protocol configured for imaging the coronary sinus*, as claimed in the instant invention.

It will be appreciated that an imaging system and method involving the coronary sinus (a vein) is different from an imaging system and method involving an artery in that, unlike arteries that are brightened by contrast injected into the patient during a scan, the coronary sinus is not brightened by much contrast in a standard cardiac exam because the body cycles the contrast before it enters the coronary sinus. Hence, a protocol configured for imaging the coronary sinus, such as the one disclosed and claimed in the instant application, needs to be used, which Applicant submits is not routine. An exemplary protocol is outlined in Figure 3 of the instant application.

Absent anticipatory disclosure in Okerlund of each and every element of the claimed invention arranged as in the claim, Okerlund cannot be anticipatory.

Regarding Claim 1 Specifically

Applicant has amended Claim 1 to now recite, inter alia, "...an image generation system for generating at least one viewable image from the volume of cardiac image data through *dynamic segmentation*."

In comparing Okerlund with the instant invention, Applicant submits that Okerlund does not disclose each and every element of the claimed invention arranged as claimed, and therefore cannot be anticipatory.

Regarding Claims 3-5, 10, 19, 21 and 24 Specifically

Applicant has amended Claims 3-5, 10, 19, 21 and 24 to now claim, inter alia, the right atrium *and the coronary sinus*. (Emphasis added). Support for these claim amendments may be found in the specification as originally filed. No new matter has been added.

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In comparing Okerlund with the instant invention, Applicant submits that Okerlund does not disclose each and every element of the claimed invention arranged as claimed, and therefore cannot be anticipatory.

Regarding Claim 7 Specifically

Applicant has amended Claim 7 to now recite, inter alia, “...*determining whether an arterial-phase or a venous-phase contrast study is under review... dynamically adjusting a segmentation threshold in preparation for performing vessel tracking of the coronary sinus from the volume of cardiac image data, thereby enabling the coronary sinus to be tracked for both arterial-phase and venous-phase contrast enhanced studies....*” (Emphasis added).

Support for this claim amendment may be found in the specification as originally filed. See Figure 3 and accompanying text beginning at Paragraph [0037]. No new matter has been added.

In comparing Okerlund with the instant invention, Applicant submits that Okerlund does not disclose each and every element of the claimed invention arranged as claimed, and therefore cannot be anticipatory.

Dependent claims inherit all of the limitations of the respective parent claim and any intervening claim.

In view of the amendment and foregoing remarks, Applicant submits that Okerlund does not disclose each and every element of the claimed invention arranged as claimed, and therefore cannot be anticipatory. Accordingly, Applicant respectfully submits that the Examiner's rejection under 35 U.S.C. §102(e) has been traversed, and requests that the Examiner reconsider and withdraw this rejection.

Rejections Under 35 U.S.C. §103(a)

Claims 1-13, 16-28 and 30 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Keidar (U.S. Patent No. 6,650,927, hereinafter Keidar) in view of

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Subramanyan et al. (U.S. Patent No. 6,782,284, hereinafter Subramanyan) and further in view of Chen et al. (WO 96/10949, hereinafter Chen).

Regarding Claims 1-13, 16-28 and 30, the Examiner acknowledges that Keidar does not disclose a database, an operator interface and a post-processing system for inserting a geometrical marker and selecting a viewable parameter, looks to Subramanyan and Chen to cure these deficiencies, and alleges that it would have been obvious at the time the invention was made to a person of ordinary skill in the art to employ the user-interface and post-processing software of Subramanyan in the invention as taught by Keidar to enable vascular tracking and visualization in 3D from multiple directions and to allow intuitive graphical feedback and interaction with the physician when administering treatment in tricky regions of the heart which are difficult to mentally visualize. Paper 11172004, page 7.

Claim 29 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Keidar in view of Subramanyan, and further in view of Chen and Takeo (U.S. Patent No. 6,289,115, hereinafter Takeo).

Regarding Claim 29, the Examiner alleges that the above-mentioned references differ from the claimed invention in that a radiation therapy medical digital imaging object standard is not specifically addressed, looks to Takeo to cure this deficiency, and alleges that it is well known to store image data in DICOM format to enable standardized communication and exchange of data, and that it would have been obvious at the time the invention was made to a person of ordinary skill in the art to transfer data using DICOM format as taught by Takeo in the invention as taught by Keidar in view of Subramanyan and further in view of Chen for the above described reasons. Paper 11172004, page 8.

Applicant traverses these rejections for the following reasons.

Applicant respectfully submits that the obviousness rejection based on the References is improper as the References fail to teach or suggest each and every element of the instant invention. For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). The Examiner must meet the burden of

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establishing that all elements of the invention are taught or suggested in the prior art.
MPEP §2143.03.

Applicant has amended Claims 1, 3-5, 7, 10, 16-17, 19, 21 and 24, as discussed above in reference to the rejections under 35 U.S.C. §102(e). In view of these amendments and remarks made in connection therewith, Applicant respectfully submits that the references fail to teach or suggest each and every element of the claimed invention and therefore cannot properly be used to establish a *prima facie* case of obviousness. Accordingly, Applicant requests reconsideration and withdrawal of all rejections under 35 U.S.C. §103(a), which Applicant respectfully considers to be traversed.

Furthermore, Applicant respectfully submits that "to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicant." *In re Werner Kotzab*, CITATION (citing: *In re Dance*, 48 USPQ2d 1635, 1637 (Fed. Dir. 1998); *In re Gordon*, 221 USPQ 1125, 1127 (Fed. Cir. 1984). There must also be a reasonable expectation of success in modifying or combining the prior art, determined from the vantage point of the skilled artisan at the time the invention was made. *In re Fine*, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988); *In re Wilson*, 165 USPQ 494, 496 (CCPA 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 USPQ2d 1016, 1023 (Fed. Cir. 1996). And, there must be some degree of predictability in showing the reasonable expectation of success. *In re Rinehart*, 189 USPQ 143 (CCPA 1976); MPEP §2143.03.

Applicant respectfully submits that modifying Keidar as alleged by the Examiner to arrive at the claimed invention is inconsistent with the teaching of Keidar.

For example, Keidar teaches the rendering of diagnostic imaging data on a three-dimensional map using an electromagnetic sensor mounted within a catheter that is *inserted into the patient*. Column 4 lines 25-49.

If one skilled in the art were to follow the teaching of Keidar, as modified by Subramanyan, Chen and Takeo as alleged by the Examiner, one skilled in the art would

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still not arrive at the invention as claimed in the instant application.

More specifically, Applicant respectfully submits that Keidar as modified fails to teach or suggest an imaging system, or method for generating an image, for use in medical *intervention procedure planning involving a coronary sinus*, involving the procurement of a volume of cardiac image data from a medical scanner *using a protocol configured for imaging the coronary sinus*, as claimed in the instant invention. By the very language of Keidar, Keidar teaches an *interventional procedure*, and not intervention *procedure planning involving the coronary sinus*, and Subramanyan, Chen and Takeo fail to cure these deficiencies.

In following the teaching of Keidar as modified by the Examiner, one skilled in the art is not only taught an invention that teaches away for the claimed invention thereby failing to arrive at the claimed invention, but is also taught a combination of elements that lacks any motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicant.

In view of the foregoing, Applicant submits that the combination of References as alleged by the Examiner fail to teach or suggest each and every element of the claimed invention that enable one skilled in the art to arrive at the claimed invention, and disclose a substantially different invention from the claimed invention, and therefore cannot properly be used to establish a prima facie case of obviousness. Accordingly, Applicant respectfully requests reconsideration and withdrawal of all rejections under 35 U.S.C. §103(a), which Applicant considers to be traversed.

In light of the forgoing, Applicant respectfully submits that the Examiner's rejections under 35 U.S.C. §102(e) and 35 U.S.C. §103(a) have been traversed, and respectfully requests that the Examiner reconsider and withdraw these rejections.

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Regarding New Claims 34-40

Applicant has added new Claims 34-37 that depend from Claim 16, and for at least the reasons set forth above, submits that they are directed to allowable subject matter and respectfully requests entry and notice of allowance thereof.

Applicant has added new Claims 38-39 that are directed to dynamic segmentation and variation thereof, and for at least the reasons set forth above, submits that they are directed to allowable subject matter and respectfully requests entry and notice of allowance thereof.

Applicant added new Claim 40 that depends from Claim 1, and for at least the reasons set forth above, submits that it is directed to allowable subject matter and respectfully requests entry and notice of allowance thereof.

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The Commissioner is hereby authorized to charge any additional fees that may be required for this amendment, or credit any overpayment, to Deposit Account No. 07-0845.

In the event that an extension of time is required, or may be required in addition to that requested in a petition for extension of time, the Commissioner is requested to grant a petition for that extension of time that is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to the above-identified Deposit Account.

Respectfully submitted,

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